

ABSTRACT:

The invention relates to a method of breaking a substrate of a brittle material, the method comprising the steps of providing a substrate (1) of a brittle material, heating the substrate with a laser beam (3) to create a heated spot on the substrate, moving the laser beam and the substrate with respect to each other to create a line of heated spots on the substrate (2), cooling the heated spots on the substrate by locally applying a cooling medium (4) behind the heated spots such that a micro-crack is propagated in the line of heated spots, and breaking the substrate along the line of the propagated micro-cracks by applying a mechanical force on the substrate wherein, the cooling medium comprises an aqueous surfactant solution. The surfactants will connect to the broken siloxane bonds inside the surface cracks. Then recombination and healing of the broken siloxane bonds will not occur and the required breaking load will remain constant over time.

Fig. 1